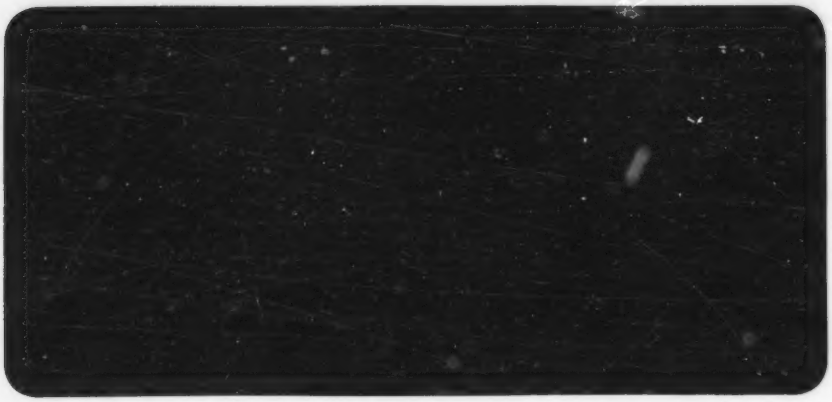
Working Paper



Department of Finance

Economic and Fiscal Policy Branch

Working papers are circulated in the language of preparation, to make analytic work undertaken by the staff available to a wider readership. They have received only limited evaluation and do not reflect the views of the Department of Finance. Comments on the working papers are invited and may be sent to the author(s).

Trade Barriers Between Canada and the United States

by

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Working Paper No. 88-3

Economic Studies and Policy Analysis Division
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Estimates of permanent non-tariff barriers to trade used in this report were prepared by A. R. Moroz, formerly of the Institute for Research on Public Policy, under a contract jointly funded by the Departments of External Affairs, Finance and Regional Industrial Expansion.

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ABSTRACT

This study is one of a series of technical papers that provide details of the Department of Finance's analysis of the impact of Canada-U.S. free trade. Results of the Department of Finance analysis were summarized in the document The Canada-U.S. Free Trade Agreement: An Economic Assessment.

This study provides estimates of most of the important barriers that restrict the flow of imports of goods between Canada and the United States. The barriers analysed comprise tariffs, quantitative restrictions on imports, federal non-defence procurement policies and contingent protection measures. Data limitations precluded an analysis of export restrictions, import restrictions on ships and used transportation equipment, provincial preferential procurement policies, and product standards. However, these omissions do not affect the general conclusions of this study. Finally it is to be noted that practices affecting producer prices only (subsidies, preferential credit etc.) are beyond the scope of this study.

The main findings of the study are:

1) The average rate of protection, defined as the increase in domestic prices made possible by trade barriers, is similar in both countries, averaging roughly 6 per cent in Canada and 5 per cent in the United States. Tariffs are the most important trade barrier, followed by quantitative restrictions. The effect of preferential federal procurement on rates of price protection is minimal.

2) The overall structure of protection is also similar in Canada and the United States, with a small number of industries accounting for a substantial proportion of total price protection. Furthermore, industries that are highly protected in Canada tend to be highly protected in the United States as well.

3) Quantitative restrictions on imports are significant in agriculture and food industries in the two countries and generally are a necessary counterpart to price-support and supply-management programs.

4) The amount of price support provided by contingent protection measures such as countervail or antidumping duties is estimated to be small in both countries. However, the uncertainty generated by contingent protection measures likely represents a significant trade barrier, particularly to Canadian exporters.

RÉSUMÉ

Cette étude fait partie d'une série de rapports techniques qui documentent l'analyse de l'impact du libre-échange canado-américain effectuée par le ministère des Finances. Les résultats de cette analyse sont résumés dans le document intitulé: Accord de libre-échange entre le Canada et les États-Unis: Une évaluation économique.

Ce document présente une estimation des barrières les plus importantes qui restreignent le flux des importations de biens entre le Canada et les États-Unis. Les barrières analysées comprennent les tarifs, les restrictions quantitatives à l'importation, les pratiques préférentielles d'achats de biens non-militaires au niveau fédéral, et les mesures exceptionnelles de protection. Les contraintes imposées par les données ont empêché une analyse des restrictions à l'exportation, des restrictions sur les importations de bateaux et l'équipement de transport usagé, des pratiques préférentielles d'achats au niveau provincial, et des normes techniques. Toutefois, ces ommissions n'affectent par les conclusions générales de cette étude. Finalement il est à souligner que les pratiques qui n'affectent que les prix du producteur (les subventions, les prêts et des taux préférentiels, etc.) dépassent l'étendue de cette étude.

Les principales conclusions de l'étude sont les suivantes:

(1) Le taux moyen de protection, défini comme la hausse des prix intérieurs possible suite à l'imposition des barrières commerciales, est semblable dans les deux pays, s'établissant à environ 6 % au Canada et à 5 % aux États-Unis. Les tarifs représentent la plus importante barrière commerciale, suivis des restrictions quantitatives. Les politiques préférentielles d'achat pratiquées par les administrations gouvernementales affectent peu les taux de protection des prix.

(2) La structure globale de protection est aussi semblable au Canada et aux États-Unis. Une part importante de la protection totale est accordée à un petit nombre d'industries. De plus, les secteurs qui sont fortement protégés au Canada ont tendance à l'être également aux États-Unis.

(3) Dans les deux pays, les restrictions quantitatives sont importantes dans les secteurs de l'agriculture et des produits alimentaires. Elles représentent généralement une contrepartie nécessaire aux programmes de soutien des prix et de gestion des approvisionnements.

(4) Selon les estimations, la protection des prix découlant de mesures exceptionnelles de protection, telles que les droits compensateurs ou les droits antidumping, est peu importante dans les deux pays. Cependant, l'incertitude engendrée par ces mesures constitue vraisemblablement un important obstacle au commerce, plus particulièrement dans le cas des exportateurs canadiens.

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TRADE BARRIERS BETWEEN CANADA AND THE UNITED STATES

I Introduction

The Department of Finance has recently completed a major research project evaluating the impact of the Canada-U.S. Free Trade Agreement on the Canadian economy. The conclusions of this research were summarized in the document The Canada-U.S. Free Trade Agreement: An Economic Assessment. This study is one of a series of technical papers providing details of the Department's analysis; it presents estimates of both tariff and most of the important federal non-tariff barriers (NTBs) to trade in goods between Canada and the United States. Trade barriers are measured in terms of the degree of price protection provided to domestic industry. NTBs analysed in this study include quantitative restrictions (QRs) on imports and preferential federal procurement of non-defence goods.

The tariff rates are those applicable in 1987, following the full phasing-in of the Tokyo Round reductions, adjusted to include the recently-announced import user fee in the U.S. The tariffs and the NTBs include all permanent measures; but they exclude measures such as countervailing duties, which are contingent upon proving injury and are generally temporary in nature. The latter measures are tabulated separately. The estimates of QRs and government procurement used in this study were prepared by the Institute for Research on Public Policy under a contract jointly funded by the Departments of Finance, External Affairs and Regional Industrial Expansion.

This study provides quantitative estimates of Canadian and U.S. tariff and non-tariff barriers derived in a consistent analytical framework at a disaggregated, 93 industry level. Further, the tariff

estimates presented in this paper use production data as aggregation weights at the earliest possible stage. The more common procedure, which uses import weights only, tends to underestimate the degree of protection provided to industries.

The remainder of this study is organized as follows: Section II sets out the scope of the study by defining what is a trade barrier. Section III compares the overall level of protection provided to Canadian and U.S. industries by trade barriers. Section IV, V, VI and VII provide a more detailed examination of tariff rates, quantitative restrictions, government procurement and contingent protection, respectively. Finally, Section VIII provides some concluding comments and presents the study's main findings.

II Scope of the Study

In the absence of government intervention, market imperfections, uncertainty and transportation costs, domestic and international prices would be identical for any tradable good. Consequently, any government policy or practice that drives a wedge between domestic and world prices can be considered a trade barrier. Table 1 provides a list of some of the more significant trade barriers in place around the world.

Table 1 excludes contingent protection measures such as countervail or antidumping actions, on the grounds that they are simply designed to offset the unfair trading practices of other nations or to provide only temporary protection to domestic industry. However, these principles are not always respected, so contingent protection measures can be considered to be trade-distorting practices. Furthermore, U.S. contingent protection legislation is used in such a manner that uncertainty about access to the U.S. market is created. This uncertainty magnifies the importance of contingent protection as a trade barrier.

It is worth noting that some of the practices listed in that table, while not specifically designed to affect trade patterns, may nevertheless have this effect. On the other hand, Table 1 excludes taxes or subsidies applied to a broad range of traded goods. Such taxes and subsidies are viewed as not significantly influencing trade patterns in the long run, since they tend to be offset by exchange rate movements.[1]

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1. See Johnson, H. and M. Krauss, "Border Taxes, Border Tax Adjustments, Comparative Advantage and the Balance of Payments", Canadian Journal of Economics, November 1970, pp 595-602.

This study provides estimates of most of the important federal government barriers that restrict the flow of imports of goods between Canada and the United States. The barriers analysed comprise tariffs, quantitative restrictions on imports, federal non-defence procurement policies and contingent protection measures. Data limitations precluded an analysis of export restrictions, import restrictions on ships and used transportation equipment, provincial preferential procurement policies, and product standards. However, these omissions should not significantly affect the general conclusions of this study. Finally, it is to be noted that practices affecting producer prices only (subsidies, preferential credit, etc.) are beyond the analytical and quantitative scope of this study.

Table 1
Government Practices that Create Trade Barriers

Practices Affecting Producer and Consumer Prices
- Revenue-generating Practices
  - Tariffs
  - Variable levies
  - Excessive fees or charges for service
  - Import deposits
  - Tariff quotas[1]
  - Auction quotas
  - Arbitrary customs valuation
  - Preferential application of excise taxes
- Non-revenue Generating Practices
  - Non-auction quotas, orderly marketing agreements and other quantitative restraints
  - Preferential government procurement
  - Excessive import documentation costs and delays
  - Arbitrary application of product standards
  - State trading
  - Split exchange rates
  - Performance requirements for foreign investors
  - Countertrade and offset agreements

Practices Affecting Producer Prices Only
- Direct Industry Subsidies
  - Direct cash grants
  - Tax credits, special tax arrangements
  - Benefits-in-kind
- Preferential Access to Credit
  - Concessional rates
  - Loan guarantees and insurance programs
- State Ownership or Equity Participation at Less-Than-Competitive Rates of Profit
- Export-Specific Subsidies
  - Subsidized export credit
  - Government-financed export promotion
  - Tied aid to LDCs
  - Loan guarantees for foreign investment
  - Tax incentives

Other Trade-Distorting Practices
- Exchange Controls

---

1. This is a multi-tiered tariff structure where imports below a threshold volume are subject to a lower tariff rate than imports above that threshold.

Source: Morici and Megna, U.S. Economic Policies Affecting Industrial Trade, p. 6.

III Overall Trade Barriers

In this study, trade barriers are measured by the degree of price protection provided to domestic industry by the tariff or NTB. Price protection is defined as the actual or potential increase in domestic prices made possible by the imposition of a trade barrier. Tariffs are assumed to increase domestic prices by the amount of the tariff. NTBs are expressed as a tariff that would have an equivalent effect on import prices and volumes as the NTB in question. In this study, the tariff equivalent (TE) of a quantitative restriction is generally calculated as the difference between the domestic price and the world price of the restricted good, after correcting for tariffs and transport costs. The TE of preferential procurement policies is calculated as the tariff rate required to reduce total imports by the change in government imports attributable to preferential procurement practices. This is equivalent to assuming that preferential government procurement policies have the same effect as a quota that reduces imports by the same amount as the procurement practice.

While this methodology does, in principle, produce consistent measures of protection for tariffs and NTBs, several qualifications must be made. First, domestic prices may not change by the full amount of the tariff. For example, if the domestic product is perceived to be inferior to the imported good, its price may change by less than the amount of the tariff. Also, if prices in the importing country affect world prices (the large country hypothesis), part of the burden of the tariff will be shifted to exporters in the form of lower prices, so domestic prices will increase by less than the tariff. Second, this methodology attributes all of the difference between the domestic and world price of a good subject to a quota (after adjustment for known factors) to the quota. There may be other distortions in the market place that causes the two prices to differ. Third, the techniques used to calculate the tariff equivalent of preferential government

procurement, like the tariff estimates, also require the assumptions that domestic and imported goods be highly substitutable and that the importing country have no impact on import prices. Finally, a number of other more or less arbitrary assumptions must be made to calculate the tariff equivalent of NTBs. These assumptions are described in Annex D and in the working paper on Canadian tariffs.

When discussing NTBs, this study reports only the additional protection provided by an NTB, that is, the portion of the rate of protection provided by the NTB that exceeds the protection provided to the same commodity by tariffs. Total rates of protection are therefore calculated by adding together tariff rates and the reported tariff equivalent of NTBs. It is worth noting that in all industries where NTBs are present, the degree of protection provided by the NTB exceeds that provided by tariffs.

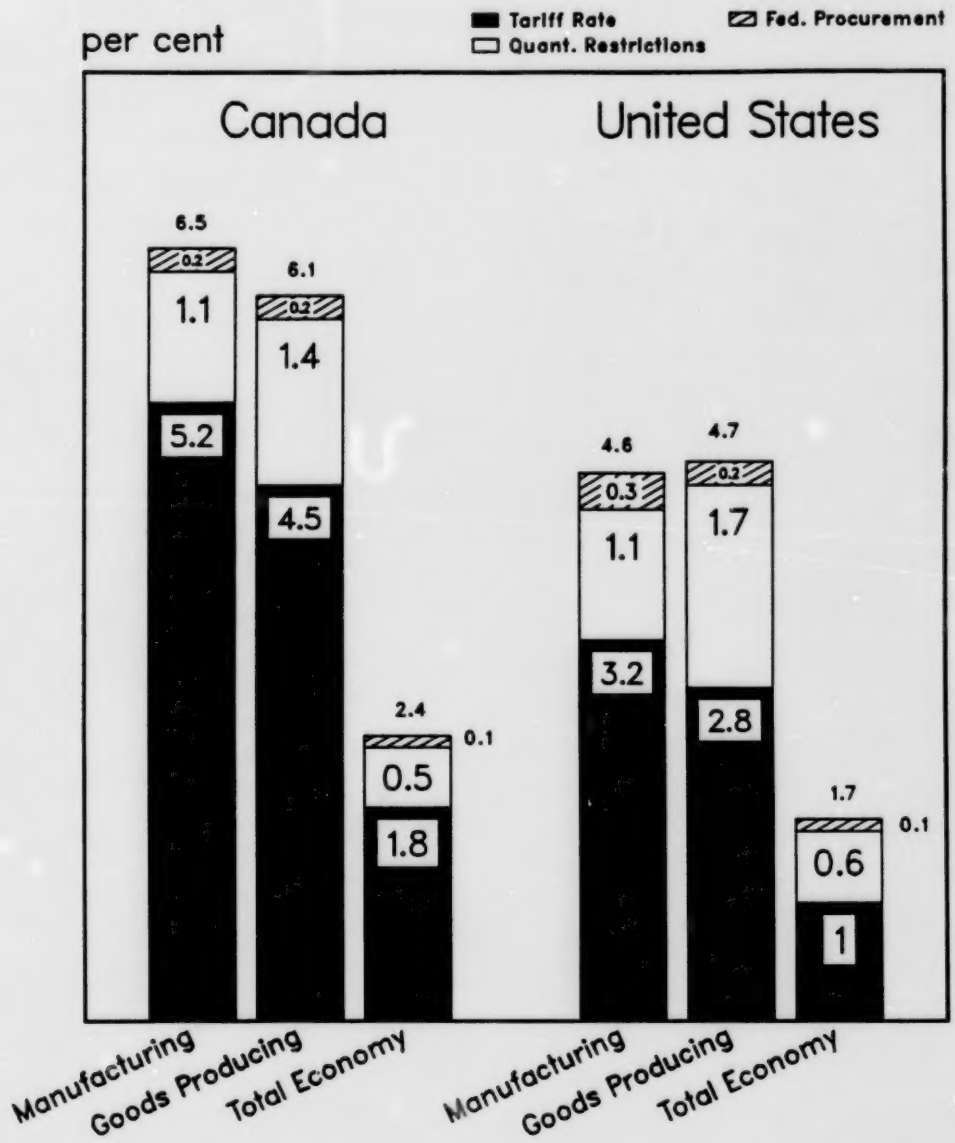
It must be stressed that, since tariffs and NTBs overlap, elimination of tariffs does not necessarily reduce the rate of protection provided to industries protected by both tariffs and NTBs. However, to the extent that NTBs apply to only part of the industry's production, eliminating tariffs would reduce the rate of protection provided to several of the industries discussed in this paper.

As can be seen in Chart 1, the overall level of protection provided by trade barriers is similar in the two countries. Canadian goods-producing industries receive, on average, a 6.1 per cent rate of price protection, compared to 4.7 per cent in the U.S. Since goods production is 39 per cent of total production in Canada and 35 per cent in the United States, the amount of price protection provided to the overall Canadian and U.S. economies by these trade barriers is much smaller, 2.4 per cent and 1.7 per cent respectively.

Tariffs are by far the most important trade barrier in the two countries; they account for almost 75 per cent (4.5 percentage points) of the total price protection in Canada and 60 per cent (2.8 percentage points) of the total in the U.S. Quantitative restrictions account for just over a third (1.7 percentage points) of total price protection in the U.S., compared to about a quarter (1.4 percentage points) in Canada. Preferential federal procurement of non-defence goods has minimal effects on average rates of price protection in both countries.

Details of these trade barriers, at a 31 industry level, are presented in Table 2. Annex C contains the same information for 93 industries.

Chart 1
Canadian and U.S. Trade Barriers



Source: Department of Finance and the Institute for Research on Public Policy

TABLE 2
COMPARISON OF CANADIAN AND U.S TRADE BARRIERS (3) INDUSTRY CLASSIFICATION)

	CANADA				UNITED STATES			
	TARIFF RATE (1)	QUANTITATIVE RESTRICTIONS (2)	FEDERAL PROCUREMENT (3)	TOTAL	TARIFF RATE (1)	QUANTITATIVE RESTRICTIONS (4)	FEDERAL PROCUREMENT (5)	TOTAL
	(PER CENT)							
AGRICULTURE	3.0	8.6	0.0	11.6	2.0	10.7	0.0	12.7
FORESTRY	0.0	0.0	0.0	0.0	0.2	0.0	0.6	0.8
FISHING AND TRAPPING	0.2	0.0	0.0	0.2	1.7	0.0	0.0	1.7
MINING	0.2	0.0	0.0	0.3	0.4	0.0	0.0	0.4
METAL MINES	0.1	0.0	0.0	0.1	0.3	0.0	0.1	0.4
MINERAL FUELS	0.2	0.0	0.1	0.3	0.4	0.0	0.0	0.4
NON-METAL MINES AND QUARRIES	0.4	0.0	0.0	0.4	0.4	0.0	0.0	0.4
MANUFACTURING	5.2	1.1	0.2	6.5	3.2	1.1	0.3	4.6
FOOD AND BEVERAGE	5.2 (6)	6.9 (7)	0.0	12.1	3.6	8.1	0.3	12.1
TOBACCO	16.5	0.0	0.0	16.5	20.7	0.0	0.0	20.7
RUBBER AND PLASTICS	9.4	0.0	0.0	9.4	4.5	0.0	0.1	4.6
LEATHER	15.7	0.0	0.0	15.8	7.5	0.0	0.0	7.5
TEXTILES	11.4	0.0	0.0	11.4	8.5	0.0	0.0	8.6
KNITTING MILLS	22.7	0.0	0.0	22.7	12.3	0.0	0.0	12.3
CLOTHING	19.7	0.0	0.0	19.7	10.9	0.0	0.0	10.9
WOOD	2.5	0.0	0.0	2.5	1.5	0.0	0.0	1.5
FURNITURE AND FIXTURES	12.5	0.0	0.1	12.6	2.0	0.0	0.5	2.5
PAPER AND ALLIED PRODUCTS	3.5	0.0	0.0	3.5	2.4	0.0	0.1	2.5
PRINTING AND PUBLISHING	2.7	0.0	0.0	2.7	0.6	0.0 (8)	0.1	0.7
PRIMARY METALS	4.2	0.0	0.1	4.2	3.1	0.0	0.2	3.3
METAL FABRICATING	7.3	0.0	0.3	7.6	2.6	0.0	0.1	2.7
MACHINERY	4.9	0.0	2.0	7.0	2.8	0.0	0.4	3.2
TRANSPORTATION EQUIPMENT	2.3	0.0	0.1	2.4	0.6	0.0	0.2	0.9
MOTOR VEHICLES	1.8	0.0	0.0	1.8	0.2	0.0	0.2	0.3
MOTOR VEHICLE PARTS	1.1	0.0	0.0	1.1	0.6	0.0	0.0	0.6
AIRCRAFT AND PARTS	0.5	0.0	0.2	0.6	0.9	0.0	0.8	1.7
SHIPBUILDING	10.1	0.0	1.4	11.4	0.3	0.0 (9)	0.0	0.3
OTHER TRANSP. EQUIP.	8.5	0.0	0.1	8.6	4.3	0.0	0.0	4.3
ELECTRICAL PRODUCTS	7.8	0.0	0.9	8.7	4.3	0.0	0.7	5.0
NON-METALLIC MINERAL PRODUCTS	6.3	0.0	0.0	6.3	2.6	0.0	0.0	2.6
PETROLEUM AND COAL PRODUCTS	0.5	0.0	0.2	0.8	0.5	0.0	0.0	0.5
CHEMICALS AND CHEMICAL PRODUCT	6.0	0.0	0.0	6.0	3.5	0.0	0.8	4.4
MISCELLANEOUS MANUFACTURING	6.0	0.0	0.2	6.1	3.9	0.0	0.5	4.4
GOODS-PRODUCING	4.5	1.4	0.2	6.1	2.8	1.7	0.2	4.7
ALL INDUSTRIES	1.8	0.5	0.1	2.4	1.0	0.6	0.1	1.7

FOOTNOTES CAN BE FOUND ON THE FOLLOWING PAGE

NOTE: THE ESTIMATES OF QUANTITATIVE RESTRICTIONS AND DISCRIMINATORY GOVERNMENT PROCUREMENT ARE EXPRESSED IN TARIFF EQUIVALENT FORM.

SOURCE: DEPARTMENT OF FINANCE AND THE INSTITUTE FOR RESEARCH ON PUBLIC POLICY

Footnotes to Table 2

(1) 1987 Post-Tokyo Round Most Favoured National tariff rates, estimated by the Department of Finance.

(2) Includes legislated restrictions on imports and voluntary restraint agreements. Estimated by the Institute for Research on Public Policy (IRPP) using data from 1980 to 1985.

(3) Implicit price protection provided to industry by preferential federal procurement of non-defence goods. Estimates prepared by the IRPP, based on 1981 data.

(4) See (2) above. Based on a literature search performed by the IRPP.

(5) See (3) above. Based on 1984 data.

(6) The import tax on alcoholic beverages is assumed to be equivalent to the federal excise tax on domestic production of alcoholic beverages and is therefore excluded from the tariff estimates. While there are differences between the two taxes, it is not clear that, overall, domestic production or imports is favoured.

(7) Includes restrictions on imported alcoholic beverages.

(8) Canada is exempted from the "manufacturing clause" of U.S. copyright law.

(9) Does not include the effects of the U.S. ban on the use of foreign or foreign-built vessels for shipping between U.S. ports (Jones Act). This shelters U.S. shipbuilders from foreign competition. However, the impact on Canada's exports of ships to the U.S. may be quite limited given relative costs in the two countries.

When assessing the degree of price protection provided, it is useful to focus on the variance of protection rates across industries in a given country and the similarity of protection rates for a given industry in the two countries. Everything else equal, the greater the variance in protection levels across industries, the greater would be the resource reallocation effect of removing trade barriers. For example, if all goods-producing industries received protection levels of 6 per cent, removal of trade barriers would likely result in smaller resource shifts than if tariff rates were zero in half the industries and 12 per cent in the other half.

Protection levels vary dramatically across industries in both countries. Based upon a 93 industry classification, estimates of price protection rates vary from virtually zero in some industries in both countries to 58 per cent in Canada and 45 per cent in the U.S. Though the maximum rate is higher in Canada, the variance of rates is about the same in the two countries. The coefficient of variation, defined as the standard deviation divided by the unweighted average, is 144 per cent in Canada and 136 per cent in the U.S.

In both countries, a small number of industries account for a substantial proportion of total price protection. The ten most protected industries (in a 93 industry classification) account for about 7 per cent of goods production in Canada and 14 per cent in the U.S., but they account for just over a quarter of total price protection in Canada (1.7 percentage points) and nearly two thirds in the U.S. (2.9 percentage points).

The correlation of protection rates in the two countries will influence the impact of removing trade barriers. That is, if industries receiving high rates of protection in Canada also receive high rates of protection in the U.S., reducing trade barriers may cause less restructuring than if protection structures are very different.

However, this observation must be qualified by noting that aggregation may hide different tariff rates on subcomponents of an industry so that export opportunities for Canadian producers may not offset increased competition from U.S. producers, despite similar rates of protection for the industry as a whole.

At the 93 industry aggregation, the correlation between protection rates in the two countries is 0.38; however, if industry pairs in which Canadian industries receive protection rates in excess of 10 per cent are examined, the correlation coefficient rises to 0.70. Industries receiving the highest rates of protection in one country are often highly protected in the the other country as well. Indeed, six of the ten most protected industries in Canada and the U.S. are common to both countries and the remainder are related industries. In three of the six common industries, the rate of protection is higher in the U.S. than in Canada. The picture does not change much if the twenty most protected industries are examined: thirteen industries are the same but in only four of these are protection rates higher in the U.S. than in Canada.

The overall similarity of the structure of protection rates in the two countries can be seen in Chart 2. Chart 3, on the other hand, highlights the differences. Low trade barriers (less than 2.5 per cent) protect a roughly similar share of industry production in both countries. However, the share of U.S. industry production that is protected by medium range trade barriers is double the Canadian share. In contrast, high trade barriers (greater than 7.5 per cent) protect a substantially greater share of industry production in Canada than in the United States.

CHART 2
DISTRIBUTION OF INDUSTRY PRODUCTION
BY RATE OF PRICE PROTECTION

CUMULATIVE

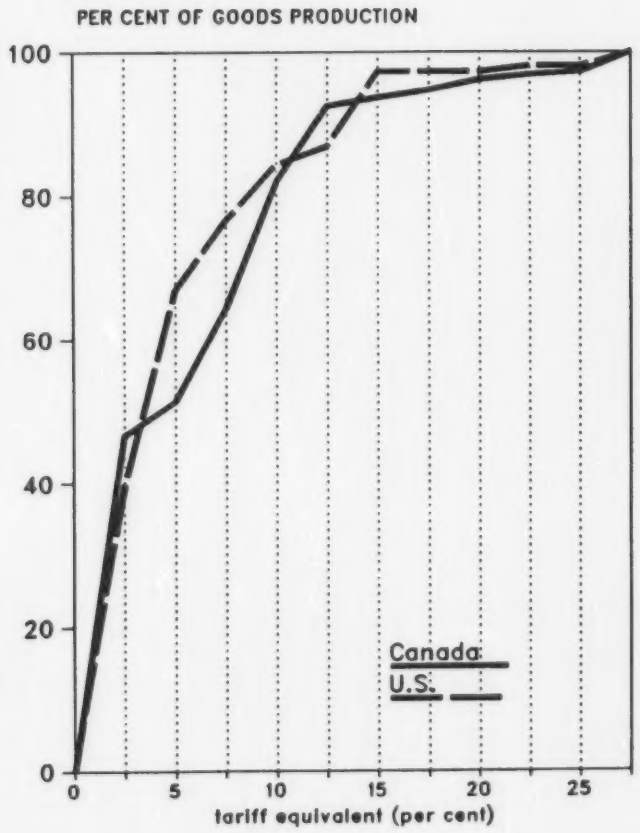
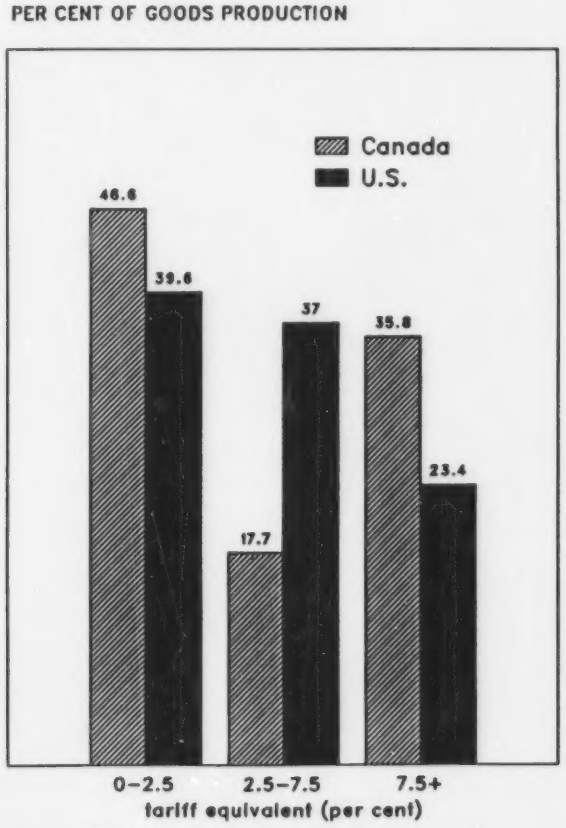


CHART 3
DISTRIBUTION OF INDUSTRY PRODUCTION
BY RATE OF PRICE PROTECTION



IV Tariff Rates

The Canadian tariff rates used in this study are drawn from the Department of Finance working paper, New Estimates of Canadian Tariff Rates by Industry and Commodity. The U.S. tariff rates were developed specifically for this paper, using the methodology outlined in the working paper on Canadian tariffs.

At the level of aggregation used in this paper, most, if not all, industries produce more than one commodity. Typically, these commodities are protected by different tariffs and so a weighted average tariff must be constructed for each industry. While none of the various methods of calculating average tariffs are perfect, production weights are more appropriate for calculating the rate of price protection provided to industries by tariffs. As Melvin and Wilkinson state:

> Ideally, since the nominal industry tariff is used in our calculations to show how much, on the average, the industry could raise prices due to the tariff, we would want to weight by domestic production or consumption.[1]

As is well known, the more common procedure that uses only import weights tends to underestimate the degree of protection provided since the tariffs that are the most effective in restricting imports get the lowest weights. A more detailed discussion of weighting procedures and the methodology used to calculated average tariffs can be found in the paper mentioned above.

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1. James R. Melvin and Bruce W. Wilkinson, Effective Protection in the Canadian Economy, Economic Council of Canada, 1968, p. 12.

Unfortunately, the lack of detailed production data does not permit the use of production weights throughout the aggregation procedure. Therefore, the tariff rates reported in this study were developed using import and production data in a two step weighting procedure. In the first step, over 3500 Canadian and over 5000 U.S. statutory, most-favoured-nation tariff rates were aggregated to each country's most detailed Input-Output commodity classification. Input-Output production data was then used to transform these tariffs from a commodity base to industry base. The resulting tariffs by industry were aggregated using production weights to the industry detail used in this study.

In the post-World War II period, Canada and the U.S. have been steadily reducing their tariff barriers in accordance with successive, multilateral General Agreement on Tariffs and Trade (GATT) rounds. The latest round of tariff cuts, the Tokyo Round, was completed early in 1987. For Canada, the average tariff rate fell from its pre-Tokyo-Round value of 6.6 per cent to 4.5 in 1987, a decline of almost 32 per cent. The average tariff for manufacturing declined from 7.5 per cent to 5.2 per cent. With the completion of Tokyo Round, much of Canadian industry receives only minimal tariff protection: just under half of goods production is shielded from international competition by a tariff rate of 2.5 per cent or less. However, roughly a quarter of total goods production is protected by tariffs of 7.5 per cent or more and 7 per cent of goods production is protected by tariffs in excess of 10 per cent.

U.S. tariff rates are, on average, lower than Canadian rates. Prior to the Tokyo Round reductions, U.S. tariff rates averaged 4.8 per cent in manufacturing and 4.1 per cent in goods-producing industries. The average tariff for goods-producing industries fell to 2.8 per cent

in 1987,[1] and the average tariff in manufacturing industries fell to 3.3 per cent. These low average tariff rates are reflected in the distribution of industrial production by tariff rates. In 1987, only 8.5 per cent of U.S. production is protected by a tariff greater than 7.5 per cent and tariffs in excess of 10 per cent apply to only 4.2 per cent of production. Furthermore, over half of production is sheltered by a tariff rate of less than 2.5 per cent.

The Free Trade Agreement (FTA) reduces Canadian tariff rates on imports from the U.S. by 4.5 percentage points on average, over a ten year period. This is a larger reduction than that of the Tokyo Round, which reduced tariffs by 2.1 percentage points, on average, on a multilateral basis. The impact on highly protected industries will be greater still since the Tokyo Round tariff reductions were not applied evenly to all industries. The reductions applied to the tariff rates affecting some of Canada's most heavily protected industries were proportionately smaller than the average reduction. For example, the tariff rates affecting the knitting mills and clothing industries declined by roughly 10 per cent of their pre-Tokyo-Round values, compared to an average reduction of 31 per cent in manufacturing.[2]

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1. This estimate includes the 0.17 per cent fee levied on imports.

2. In the United States only two highly-protected industries, tobacco and leather, had disproportionately small reductions in tariff rates as a result of the Tokyo Round negotiations.

V Quantitative Restrictions

In this study, the tariff equivalent of quantitative restrictions on agricultural goods is generally calculated as the difference between the observed producer price in Canada and the comparable world price (adjusted for tariffs and transportation charges). Due to data limitations, various proxies for the world price are used. A more complete description of this methodology can be found in Annex D.

Permanent quantitative restrictions imposed by Canada applicable to imports from the United States are significant in six of the 93 industries, which fall into two major groups: agriculture (with 8.6 per cent price protection), and food and beverage (6.9 per cent).[1] These QRs are a necessary component of agricultural price-support and supply-management programs. Grain, unprocessed milk and live poultry producers are given considerable support through these programs. Unrestricted imports of these products, in raw or processed form, could undermine the support programs.[2] Also included are the provincial liquor board restrictions on imported alcoholic beverages. The Canada-U.S. Free Trade Agreement eliminates the quantitative restraints on grains and alcoholic beverages and eases the restrictions on poultry imports.

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1. Although quotas on leather and canvas footwear have been in place for many years they are technically safeguard actions. These restrictions are now being relaxed. In late 1985, the quotas on men's and boy's footwear were eliminated and the quotas on women's and girl's footwear are to be removed in 1988. The estimates presented in this section exclude the remaining quotas; they are included in the section on contingent protection measures.
2. As part of the support for the dairy industry, imports of margarine are banned. However, we are unable to present estimates of the impact of this ban because it is impossible to separate the price effects of the import ban from the effects of the restrictions on domestic production of margarine.

U.S. quantitative restrictions on imports from Canada also affect only five industries, in two major groupings: agriculture (10.7 per cent price protection) and a number of food and beverage industries (8.3 per cent). Most, but not all, of these QRs are linked to U.S. agriculture policies. Import quotas are necessary to permit operation of sugar[1] and dairy support programs, but protection given to the meat products industry is not linked to supply-management or price-support programs. The Free Trade Agreement eliminates the U.S. restrictions on meat product imports.

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1. U.S. sugar import restrictions also affect the imports of food products that contain sugar as an ingredient. Since this aspect of the sugar import restriction affects so many products it is not possible to estimate its effect.

VI Federal Procurement Policies

In principle, the GATT Procurement Code agreed to in the Tokyo Round, prohibits discrimination in making federal non-defence purchases exceeding $238 thousand. The Free Trade Agreement reduces this threshold to $33 thousand. The GATT Procurement Code does not specifically cover provinces or states, federally-funded programs undertaken by other levels of government, legislated "set-asides", (e.g., preference for small business), Crown corporations, R & D or service contracts. National security restrictions further limit the scope of the agreement. Finally, the extent that federal non-defence purchases which are covered by the Code are in fact made in a non-discriminatory manner is an open question.

The tariff equivalent of federal procurement policies is calculated as the tariff rate required to reduce total imports by the the same amount as the change in government imports attributable to preferential procurement practices. The change in government imports resulting from preferential procurement is estimated by assuming that the observed differences between federal government and private sector import propensities are caused entirely by discrimination between domestic and foreign suppliers. For given values of import price elasticities, it is possible to calculate the tariff that would reduce imports by the estimated amount. It is assumed that domestic producers increase their prices by the amount of this tariff. This methodology requires that prices of goods purchased by government in the domestic market increase while prices paid by private purchasers remain unchanged. Otherwise, private purchasers would increase their imports, dissipating the protective effect of preferential federal procurement. Additional details on the methodology are provided in Annex D.

While this approach is satisfactory in principle, the price increases for government purchases implied by the tariff equivalents in Table 1 are unrealistically large. This may reflect the assumption that domestic producers increase their prices by the amount of the tariff equivalent. An alternative approach is to assume that competitive forces ensure that the premium paid by the government reflects the higher marginal costs that occur as domestic output rises. If the domestic supply curve is relatively flat, this alternative approach gives quite different results. For example, assuming that costs rise equiproportionately with production, the shift in demand caused by preferential procurement policies would raise domestic prices by less than 0.1 per cent in both countries. This is less than half the estimate reported in Table 2. On the other hand, the two approaches give the same result if the elasticity of supply is approximately 0.5. In the absence of any empirical evidence on supply elasticities by detailed industries, this approach was not pursued any further.

Direct purchases of non-defence[1] goods and services from private suppliers by the U.S. and Canadian federal governments are shown in Table 3. These data indicate that the Canadian federal non-defence "procurement market" was about $4.4 billion in 1981.[2] This figure likely overstates the potential trade-distorting effect of procurement policies since it includes non-tradable goods and services. The tradable portion was approximated by removing expenditures on services and non-residential construction. As a result of these exclusions, the

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1. Defence spending cannot be analyzed using the methodology applied to non-defence goods, primarily because benchmark private sector import propensities generally do not exist for defence products.

2. The most recent breakdown of Canadian federal purchases into goods and services is for 1981.

Canadian federal "procurement market" under consideration is reduced to some $800 million in 1981. The corresponding 1986 figure is $956 million. The procurement market under consideration is a small fraction of total spending by the federal government (1.1 per cent in 1981 and 0.8 per cent in 1986), which was $72.3 billion in 1981 and $116.0 billion in 1986, according to national accounts definitions. It is an even smaller proportion of total production of goods and services (0.2 per cent in both 1981 and 1986), which was $356 billion in 1981 and $510 billion in 1986.

Table 3
Federal Government Spending on Goods and Non-Wage Services

	Defence	Non-Defence	Total
A. Canada (1981)		$ Billions	
Goods[1]	1.3	0.8	2.1
Services[2]	1.2	3.6	4.8
Total	2.5	4.4	6.9
B. United States (1984)		$ U.S. Billions	
Goods[1]	85.0	10.0	95.0
Services[2]	25.9	14.2	40.1
Total	110.9	24.2	135.1

1. Includes investment in machinery and equipment.
2. Excludes capital consumption allowances, but includes investment in structures.

Sources: Input-Output Tables, the National Income and Expenditure Accounts and the Survey of Current Business.

The U.S. federal government spent $24.2 billion on non-defence goods and non-wage services in 1984. Purchases of tradable goods are estimated at $10 billion. In 1986, purchases of tradable goods are estimated to have decreased to $9.8 billion. These purchases amounted to 9.7 per cent of total federal spending and 0.2 per cent of total production in 1986.

Table 4 illustrates the calculation of the tariff equivalent of preferential federal procurement. In 1981, imports from all countries accounted for $45.7 million or 5.7 per cent of total Canadian federal government expenditures on tradable goods. It is assumed that, in the absence of preferential procurement practices, the federal import propensity would have been equal to the private sector propensity of 45 per cent. This would imply imports of $359 million. Taking the estimated level as the base, preferential procurement reduced Canadian federal government imports by 87.3 per cent. When import price elasticities and the federal share of overall Canadian expenditures are taken into account (see footnote 4 in Table 4 and Annex D), the tariff equivalent of Canadian federal non-defence procurement is estimated to be 0.2 per cent. In the United States, federal non-defence imports from all countries are estimated to be reduced by 80 per cent, or $837 million, as a result of preferential procurement practices. This also translates into a tariff equivalent of 0.2 per cent.

In both countries a significant fraction of the 93 industries examined are affected by federal procurement policies, but the maximum effect on prices exceeds 1.0 per cent for only 5 industries in Canada and 6 in the U.S. At the 31 industry aggregation shown in Table 2, the additional price protection provided to Canadian industry exceeds 1 per cent only in machinery (2.0 per cent) and shipbuilding (1.4 per cent). In the U.S. the additional price protection provided by preferential federal government procurement practices does not exceed 1 per cent in any of the 31 industries shown in Table 2.

Table 4
The Impact of Preferential Federal Government Non-Defence Procurement in Canada and the United States

	Canada (1981)	United States (1984)
	(millions of Canadian or U.S. dollars, except where noted)	
Federal Expenditures on Goods[1]	797	10048
Per cent of total expenditures on goods	0.3	0.4
Import Propensities (per cent)		
Federal[2]	5.7	2.0
Private[2]	45.0	10.4
Federal Imports		
Actual	46	205
Estimated, without discrimination[3]	359	1042
Change in level[4]	-313	-837
Percentage change[4]	-87.3	-80.3
Tariff Equivalent[5]	0.2	0.2

1. includes investment in machinery and equipment
2. weighted by government expenditures
3. private import propensity times federal expenditures
4. change from the estimated level
5. calculated as the percentage change in federal imports divided by the import price elasticity and scaled by the relative size of the government market. An adjustment is made for existing tariffs. For Canada, the formula is:

$$TE = \frac{87.3}{1.4} \times 0.003 \times 1.045 = 0.2$$

where 1.4 is the Canadian import price elasticity and 1.045 is one plus the average tariff rate. See Annex B for details.

It is worthwhile emphasizing the estimated changes in imports that could result from ending preferential federal procurement policies. As noted above, Canadian imports would have been roughly $300 million higher in 1981 if the federal import propensity had been the same as its private sector counterpart. The corresponding figure for 1986 is $375 million. In the U.S., federal imports would have been roughly $850 million higher in 1984 if federal and private sector import propensities had been the same. The corresponding figure for 1986 is roughly $825 million. The potential increase in Canada-U.S. trade is smaller than indicated by these figures, since third country producers would supply some of the additional imports.

These potential increases in imports arising from the elimination of preferential procurement policies should be considered as upper bound estimates, for the following reasons:

- preferential purchasing policies are probably not the only reason for the difference between federal and private import propensities;

- data problems likely result in an underestimate of the federal import propensity, so the potential increase in imports may be overestimated; and

- preferential purchasing policies may not have any net effect on overall imports since increased government purchases may increase industry prices and encourage private purchasers to switch to imports.

VII Contingent Protection

Both Canada and the United States make use of temporary measures, known as contingent protection in Canada and trade remedy actions in the U.S., when domestic producers are shown to be injured by imports. These import relief measures are, under certain conditions, permitted by the GATT.

Contingent protection measures are of two types. The first type consists of measures triggered by what are perceived to be "unfair trade practices". Examples include dumping, defined as sales in export markets at prices below those in domestic markets, and government subsidies to business. In addition, industries must demonstrate "material injury", or the threat of such injury, before any action is taken. By their very nature, the definitions of unfair trade practices are, to a certain extent, subjective.

The second type of import relief measures are designed to provide temporary protection against any sudden large increase in imports even though they are not caused by "unfair trade practices". Such cases are often referred to as "safeguard" or "escape" clause actions. In these cases remedies may be imposed if "serious injury" to domestic producers, which is a more stringent condition than "material injury", can be demonstrated. An example is the 35 per cent duty imposed by the United States on imports of wooden shakes and shingles from Canada.

Table 5
Summary of Bilateral Contingent Protection Measures
Taken by Canada and the United States from 1980 to mid-1987

	Canada		United States	
	Number	Value of Trade in 1986 ($ millions)	Number	Value of Trade in 1986 ($ millions)
Countervail Cases				
Investigations	1		11	
Action Taken	1	9.0	6	4171.8[1]
Antidumping Cases				
Investigations	41		20	
Action Taken	23	374.9	9	294.6
Safeguard Cases				
Investigations	2		13	
Action Taken	2[2]	18.9	4	1757.9
Total Cases				
Investigations	44		44	
Action Taken	26	403.0	19	6224.3

1. In this table, the softwood lumber case is included among U.S. countervail action although it is an export tax which was imposed in response to the threat of a countervail duty.

2. Against footwear and yellow onions. The 1982 yellow onion safeguard action was in effect for only 6 months. The quotas on women's and girls' footwear are due to expire in 1988.

Source: Trade Negotiations Office and the Department of Finance.

Table 5 summarizes contingent protection cases launched by Canada and the U.S. since 1980. The same number of cases were investigated in the two countries but there were more affirmative findings by Canada. All but 3 of the 44 cases in Canada involved anti-dumping, while U.S. cases were more evenly divided among countervail, anti-dumping and safeguard actions. Canadian industries that were the subject of these investigations include steel, lumber, fishing, livestock and meat products.

Canada reached an affirmative decision in 26 cases while the U.S. reached an affirmative decision 19 times. Based on 1984 trade data, the affirmative decisions affected $403 million of U.S. exports to Canada and $6.2 billion of Canadian exports to the U.S. Most of the difference can be attributed to two cases: the countervail duty against softwood lumber[1], which affects $3.2 billion worth of Canadian exports to the U.S. and the undertaking with respect to carbon steel, which affects $2.0 billion of Canadian exports. The two other countervail cases account for over half of the remaining $900 million of Canadian exports affected by U.S. contingent protection measures.

Table 6 lists Canadian and U.S. contingent protection measures in effect as of September 1987. There were 18 Canadian measures in effect compared to 13 American. These cases involve small changes to the average rate of price protection provided to goods: about 0.1 per cent in Canada and 0.2 per cent in the U.S. However, this comparison

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1. In December 1986, the Canadian government imposed an export tax on softwood lumber in order to forestall a pending U.S. countervail duty of similar magnitude. The export tax is treated as a U.S. countervailing duty for the purposes of this paper.

understates the true economic impact of contingent protection, especially on Canada, for the following reasons:

1) It ignores the substantial administrative and legal costs an investigation can impose on Canadian exporters.

2) The uncertainty caused by the threat of U.S. contingent protection measures has an adverse effect on trade flows that is out of proportion with remedies actually imposed. For some time, Canadian firms exporting a significant fraction of their production to the U.S. have been concerned about their vulnerability to U.S. contingent protection measures. Due to uncertain access to the U.S. market, some firms may have chosen to invest in the U.S. in order to reduce this exposure.

The uncertainty caused by U.S. contingent protection legislation has been of particular concern given the ability of U.S. firms to use the legislation to shield themselves from foreign competition.

Table 6
Contingent Protection Measures in Effect in Canada and the United States as of September 1987

	Tariff Relief		Tariff Relief[1]
CANADA		**UNITED STATES**	
Anti-dumping[1]			
Photo Albums	41.6	Cholide Chlorine	9.7
Charcoal Briquettes	60.5	Red Raspberries	2.4
Graphite Electrodes	18.0	Salted Codfish	16.3
Porcelain Insulators	13.6	Iron Const. Castings	10.2
Electric Motors	12.0	Oil Country Tubular Goods	19.4
Potatoes	23.0	Brass Sheet and Strip	6.0
Vehicle Washing Equipment	26.0	Fresh Cut Flowers	0.6
Sodium Carbonate	2.0		
Nickel and Nickel Alloy Pipe	22.1		
Abrasion Resistant Pipe	18.0		
Plate Coil	17.8		
Oil and Gas Well Casing	14.0		
Stainless Steel Pipe	22.0		
Band Saw Blades	36.2		
Gas-Powered Chain Saws	33.3		
Yellow Onions	38.6		
Metal Storage Cabinets[2]	n.a.		
Frozen Pot Pies & Dinners[2]	n.a.		
Tile Backer Board[2]	n.a.		
Countervail			
Corn	65.0	Swine	20.5
		Oil Country Tubular Goods	0.7
		Fresh Atlantic Ground Fish	6.8
		Softwood Lumber[3]	15.0
		Fresh Cut Flowers	0.6
Safeguard[4]			
Women's and Girls'[5] Footwear	10.6	Wood Shakes and Shingles	35.0
		Specialty Steel[6]	3.0
Pending Final Decision (Anti-dumping)			
Fertilizer Equipment	8.0	Colour TV Tubes	n.a.
Recreational Vehicle Doors	n.a.	Potash	36.6

1. As announced in the Notice of Final Determination. The rates actually imposed vary from shipment to shipment depending upon the annually established "normal" price and the invoice price of the good.
2. Undertaking agreements whereby U.S. exporters agreed to raise prices.
3. In December 1986, the Canadian government imposed an export tax on softwood lumber in order to forestall the imposition of a countervailing duty by the United States. The export tax is treated as a U.S. countervailing duty for measurement purposes in this document.
4. Tariffs imposed by the United States on specialty steels and wood shakes and shingles are scheduled to decline over time.
5. Estimated tariff equivalent of the quota imposed as a relief measure. The quota is scheduled to expire in 1988.
6. In addition to tariffs quotas also pertain to Canadian exports.

Sources: Trade Negotiations Office, U.S. Federal Register, Department of National Revenue and the Department of Finance.

VIII Summary and Conclusions

This study has examined the protection afforded Canadian and U.S. goods-producing industries by tariffs and other import restrictions, mainly imposed at the central government level. The main findings are:

(1) The average rate of price protection provided to goods-producing industries is similar in both countries, amounting to roughly 6 per cent in Canada and 5 per cent in the U.S. Tariff rates are by far the most important standing trade barrier in both countries, followed by quantitative restrictions on imports. Preferential federal non-defence procurement of goods has minimal effects on average rates of price protection in both countries.

(2) The structure of protection is also similar in Canada and the U.S. In both countries, a small number of industries account for a substantial proportion of the price protection. The 10 most protected industries, which account for 7 per cent of goods production in Canada and 14 per cent in the United States, receive just over a quarter of total price protection in Canada and nearly two thirds in the United States. Furthermore, industries that are highly protected in Canada tend to be highly protected in the U.S. as well: six of the ten most protected industries are common to both countries and the remainder are related industries.

(3) Although the overall structure of protection is similar in the two countries, there are some important differences. While low trade barriers (less than 2.5 per cent) protect a roughly similar share of industry production in both countries, the share of U.S. industry production that is protected by medium-range trade barriers is double the Canadian share. In contrast, high trade barriers (greater than 7.5 per cent) protect a substantially greater share of industry production in Canada than in the United States.

(4) Quantitative restrictions on imports are significant in agriculture and food industries in the two countries and are generally a necessary counterpart to price-support and supply-management programs in agriculture. Ships and used transportation equipment are also subject to import restrictions (the former in both countries and the latter only in Canada); but their impact was not quantified in this study.

(5) Both Canada and the United States launched 44 contingent protection investigations from 1980 to mid-1987. The value of U.S. exports affected by Canadian actions was roughly $400 million while about $6 billion of Canadian exports were affected by U.S. measures. The amount of price protection provided by contingent measures in force as of September 1987 was small in both countries. However, the uncertainty generated by contingent protection investigations likely represents a significant barrier, particularly to Canadian exporters.

Annexes

Annex A

Summary of Canadian Quantitative Restrictions

Table A1 lists the imported products that are affected by Canadian quantitative restrictions. Included are all products that are subject to import licencing, quotas, voluntary restraint agreements, prohibition or embargo. Note that for products subject to import licencing, few, if any, import licences have been issued in the past 10 years.

Not all these products are represented in the estimates of quantitative restrictions reported earlier in this paper. Some of the restraints reported in Table A1 do not affect Canada-U.S. trade. Also, other products subject to restraint comprise such an insignificant proportion of Canadian production that their impact is negligible. Finally, it is impossible to quantify the effect of some of the restraints on prices. For example, it is impossible to disentangle the effect of the prohibition of margarine imports from the effects of the restrictions on the domestic production of margarine.

Table A1
Canadian Imports Subject to Import Licencing, Quotas, Prohibition or Embargo

Product or Industry	Included in Study
Global Coverage	
Import Licence	
Butter	Yes
Milk and Cream	Yes
Live Chickens	Yes
Live Turkeys	Yes
Animal Products Unfit for Human Consumption	Yes
Wheat and Meslin	Yes
Barley	Yes
Oats	Yes
Cereal Flour	Yes
Cereal Groats and Meal	Yes
Wheat Gluten	Yes
Starches	Yes
Bakery Products[1]	Yes
Whale Meat	No
Whale Oil	No
Spermacetti	No
Sweetened Forage	No
Narcotics	No
Caseinates	No
Apparatus and Appliances Used in Whaling	No
Bird Skin, Feathers, Down and Parts	No
Quota	
Fresh, Chilled or Frozen Chicken	Yes
Fresh, Chilled or Frozen Turkey	Yes
Eggs and Egg Yolks	Yes
Cheese and Curds	Yes
Women's and Girl's Footwear	Yes
Prohibition	
Used Mattresses and Materials Therefrom	No
Used Automobiles	No
Used Trucks	No
Used Engines for Motor Vehicles	No
Used Bodies for Motor Vehicles	No
Used Motorcycles and Autocycles	No
Used Aircraft and Parts	No
Used Aircraft Launching Gear	No
Used Parachutes	No
Offensive Weapons	No
Smoke Screen Apparatus for Vehicles and Water-Borne Craft	No
White Phosphorus Matches	No
Live Mongoose	No
Live Starlings (excluding European)	No
Live Non-Game Birds (excluding for food or zoos)	No
Wild Bird Skins, Feathers, Quills and Parts	No
Oleomargarine, Butterine and Other Butter Substitutes	No

Table A1 (Concluded)
Canadian Imports Subject to Import Licencing, Quotas, Prohibition or Embargo

Product or Industry	Included in Study
Developing Countries Only	
Import Licence	
Cotton and Man-Made Textile Yarns	No
Cotton and Man-Made Textile Fabrics	No
Bed Sheets and Pillowcases	No
Terry Towels, Washcloths and Sets	No
Hosiery	No
Work Gloves	No
Handbags	No
Clothing	No
Bilateral Agreements[2]	
Multifibre Agreement	
Cotton and Man-Made Textile Yarns from Third World Countries[3]	No
Cotton and Man-Made Textile Fabrics from Third World Countries[3]	No
Bed Sheets and Pillow Cases from Third World Countries[3]	No
Terry Towels, Washcloths and Sets from Third World Countries[3]	
Hosiery from Third World Countries	No
Work Gloves from Third World Countries[3]	No
Handbags from Third World Countries[3]	No
Clothing from Third World Countries	No
Voluntary Restraint Agreement	
Automobiles from Japan	No

1. Retailers are allowed to import Bakery Products in retail packages under a general import licence if the product is to be sold at the retail level. All other individuals and organizations must apply for a specific import licence.
2. The bilateral agreements listed in Table A1 do not directly affect Canada-U.S. trade since goods produced in the U.S. are not covered by the Agreements. However, exporters must provide proof of country of origin, and the cost of providing such proof could have a negative impact on trade flows.
3. These restrictions are in addition to the import licencing reported earlier in this table.

Source: The Institute for Research on Public Policy

Annex B

Summary of U.S. Quantitative Restrictions

Table B1 lists U.S. imports that are subject to quotas or other quantitative restrictions. This list was based upon a literature search and is not necessarily exhaustive. As in the Canadian estimates, some of the measures reported in Table B1 do not affect Canada-U.S. trade or are impossible to quantify. These restraints do not form a part of the estimates reported earlier in this paper.

Table B1
U.S. Imports Subject to Quotas or Other Quantitative Restrictions

Product or Industry	Included in Study
Global Coverage	
Quota	
Meat Products	Yes
Dairy Products	Yes
Fats and Oils	Yes
Cereal Products	Yes
Sugar	Yes
Specialty Steel	Yes
Clothes Pins	No
Peanuts	No
Prohibition	
Asbestos	Yes
Book Manufacturing	No
Fish Products	No
Swordfish	No
Smoked Fish	No
Marine Mammals and other endangered species	No
Lottery Materials	No
Shipping (Jones Act)	No
Vaccines	No
Bilateral Agreements[1]	
Multi Fibre Agreement	
Textiles	No
Clothing	No
Voluntary Restraint Agreement	
Iron and Steel (Japan, EEC)	No
Carbon Steel (Japan, EEC)	No
Automobiles (Japan)	No
Orderly Marketing Agreement	
Footwear (Taiwan, Korea)	No
Colour Televisions (Japan, Taiwan, Korea)	No

1. The bilateral agreements listed in Table B1 do not directly affect Canada/U.S. trade since goods produced in Canada are not covered by the Agreements. However, exports must provide proof of country of origin. The cost of providing such proof could have a negative impact on trade flows.

Source: The Institute for Research on Public Policy.

Annex C

Trade Barriers by Detailed Industry

TABLE C1
COMPARISON OF CANADIAN AND U.S TRADE BARRIERS (93 INDUSTRY CLASSIFICATION)

	CANADA				UNITED STATES			
	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (2)	FEDERAL PROCURE-MENT (3)	TOTAL	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (4)	FEDERAL PROCURE-MENT (5)	TOTAL
	(PER CENT)							
AGRICULTURE	3.0	8.6	0.0	11.6	2.0	10.7	0.0	12.7
FORESTRY	0.0	0.0	0.0	0.0	0.2	0.0	0.6	0.8
FISHING & HUNTING	0.2	0.0	0.0	0.2	1.7	0.0	0.0	1.7
BASE METAL MINES	0.1	0.0	0.0	0.1	0.3	0.0	0.1	0.4
URANIUM MINES	0.1	0.0	0.0	0.1	0.3	0.0	0.1	0.4
IRON MINES	0.1	0.0	0.0	0.1	0.3	0.0	0.1	0.4
COAL MINES	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
PETROLEUM & GAS WELLS	0.3	0.0	0.1	0.3	0.5	0.0	0.0	0.5
ASBESTOS MINES	0.6	0.0	0.0	0.6	0.4	0.0	0.0	0.4
OTHER NON-METAL MINES	0.3	0.0	0.0	0.4	0.4	0.0	0.0	0.4
SERVICES INCIDENTAL TO MINING	0.1	0.0	0.1	0.1	0.5	0.0	0.0	0.5
MEAT PRODUCTS	1.9	0.0	0.0	1.9	1.1	12.2	0.4	13.7
POULTRY PRODUCTS	10.8	9.3	0.0	20.1	6.7	0.0	0.6	7.2
FISH PRODUCTS	1.9	0.0	0.0	1.9	1.6	0.0	0.0	1.6
DAIRY PRODUCTS	7.9	19.4	0.0	27.3	4.0	40.8	0.2	44.9
FRUIT & VEGETABLE PRODUCTS	9.5	0.0	0.0	9.5	8.1	0.0	0.6	8.7
FEED	2.5	0.3	0.0	2.9	0.9	0.0	0.7	1.6
FLOUR & BREAKFAST CEREALS	3.3	5.6	0.0	8.9	2.9	0.0	0.7	3.6
BISCUIT & BAKERY PRODUCTS	5.0	0.0	0.0	5.0	0.3	0.0	0.1	0.4
CONFECTIONARY PRODUCTS	7.4	0.0	0.0	7.4	6.4	0.0	0.1	6.5
VEGETABLE OIL	5.0	0.0	0.0	5.0	4.1	0.0	0.2	4.3
SUGAR	2.0	0.0	0.0	2.0	16.7	13.5	0.1	30.3
MISCELLANEOUS FOOD	6.6	0.0	0.0	6.6	3.6	0.0	0.2	3.8
SOFT DRINKS	14.3	0.0	0.0	14.3	0.8	0.0	0.2	1.0
DISTILLERIES & BREWERIES	4.1	44.9	0.0	49.0	3.1	0.0	0.0	3.1
WINERIES	3.5	54.0	0.0	57.5	6.9	0.0	0.0	6.9
TOBACCO & TOBACCO PRODUCTS	16.5	0.0	0.0	16.5	20.7	0.0	0.0	20.7
RUBBER FOOTWEAR	15.6	0.0	0.0	15.6	22.3	0.0	0.1	22.3
TIRE,TUBE & OTHER RUBBER & PLASTIC PRODUCTS	9.3	0.0	0.0	9.3	4.3	0.0	0.1	4.3
LEATHER	2.0	0.0	0.1	2.0	5.1	0.0	0.0	5.1
LEATHER FOOTWEAR	20.7	0.0	0.0	20.7	7.9	0.0	0.0	7.9
OTHER LEATHER PRODUCTS	13.9	0.0	0.0	13.9	8.6	0.0	0.0	8.6
YARN & CLOTH	16.8	0.0	0.0	16.8	9.8	0.0	0.0	9.8

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TABLE C1 ....CONTINUED
COMPARISON OF CANADIAN AND U.S TRADE BARRIERS (93 INDUSTRY CLASSIFICATION)

	CANADA				UNITED STATES			
	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (2)	FEDERAL PROCURE-MENT (3)	TOTAL	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (4)	FEDERAL PROCURE-MENT (5)	TOTAL
	(PER CENT)							
SYNTHETIC TEXTILES	12.0	0.0	0.0	12.0	5.8	0.0	0.0	5.8
CARPET,MAT & RUG	2.6	0.0	0.0	2.6	3.5	0.0	0.1	3.6
TEXTILE BAGS & CANVAS PRODUCTS	15.0	0.0	0.0	15.0	8.7	0.0	0.1	8.8
OTHER TEXTILES	10.6	0.0	0.0	10.6	9.2	0.0	0.1	9.3
HOSIERY & KNITTING	22.7	0.0	0.0	22.7	12.3	0.0	0.0	12.3
CLOTHING	19.7	0.0	0.0	19.7	10.9	0.0	0.0	10.9
SAWMILLS	1.3	0.0	0.0	1.3	0.2	0.0	0.0	0.2
VENEER,PLYWOOD,SASH & DOOR	4.4	0.0	0.0	4.4	2.2	0.0	0.0	2.2
OTHER WOOD PRODUCTS	3.6	0.0	0.0	3.6	2.4	0.0	0.0	2.4
HOUSEHOLD FURNITURE	13.1	0.0	0.0	13.2	2.1	0.0	0.5	2.6
OTHER FURNITURE	11.8	0.0	0.2	12.0	1.9	0.0	0.5	2.4
PULP & PAPER	1.7	0.0	0.0	1.7	0.4	0.0	0.2	0.6
ASPHALT ROOFING PRODUCTS	1.9	0.0	0.0	1.9	0.5	0.0	0.1	0.6
PAPER BOX & BAGS	9.5	0.0	0.0	9.5	3.8	0.0	0.1	3.9
OTHER PAPER PRODUCTS	8.7	0.0	0.0	8.7	2.9	0.0	0.1	3.0
PRINTING & PUBLISHING	2.5	0.0	0.0	2.5	0.6	0.0	0.0	0.6
ENGRAVING & STEREOTYPING	5.8	0.0	0.0	5.8	1.6	0.0	0.4	1.9
IRON & STEEL FOUNDRIES	6.7	0.0	0.0	6.7	3.4	0.0	0.0	3.4
STEEL PIPE & TUBE	7.6	0.0	0.0	7.6	4.1	0.0	0.0	4.1
SMELTING & REFINING	1.5	0.0	0.1	1.6	1.2	0.0	0.0	1.2
ALUMINUM ROLLING,CASTING & EXTRUDING	1.4	0.0	0.0	1.4	2.6	0.0	0.0	2.6
COPPER & ALLOY ROLLING,CASTING & EXTRUDING	2.9	0.0	0.0	2.9	1.9	0.0	1.3	3.2
OTHER METAL ROLLING,CASTING & EXTRUDING	2.0	0.0	0.0	2.1	5.5	0.0	1.3	6.8
BOILER & PLATE	7.4	0.0	0.7	8.1	4.3	0.0	0.1	4.4
FABRICATED STRUCTURAL STEEL	8.3	0.0	0.1	8.4	2.6	0.0	0.1	2.6
METAL STAMPING	7.2	0.0	0.5	7.8	0.5	0.0	0.0	0.5
WIRE & WIRE PRODUCTS	6.6	0.0	0.1	6.7	2.7	0.0	0.1	2.8
HARDWARE & CUTLERY	6.5	0.0	0.1	6.5	3.3	0.0	0.2	3.5
OTHER METAL FABRICATING	6.9	0.0	0.6	7.5	3.3	0.0	0.1	3.4
AGRICULTURAL MACHINERY & EQUIPMENT	0.5	0.0	0.0	0.5	0.9	0.0	0.0	0.9
INDUSTRIAL MACHINERY & EQUIPMENT	6.2	0.0	2.5	8.7	2.9	0.0	0.3	3.1
OFFICE MACHINERY & EQUIPMENT	4.2	0.0	2.2	6.4	3.5	0.0	1.1	4.6
AIRCRAFT & PARTS	0.5	0.0	0.2	0.6	0.9	0.0	0.8	1.7

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TABLE C2
COMPARISON OF CANADIAN AND U.S TRADE BARRIERS (70 INDUSTRY CLASSIFICATION)

	CANADA				UNITED STATES			
	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (2)	FEDERAL PROCURE-MENT (3)	TOTAL	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (4)	FEDERAL PROCURE-MENT (5	TOTAL
	(PER CENT)							
AGRICULTURE	3.0	8.6	0.0	11.6	2.0	10.7	0.0	12.7
FORESTRY	0.0	0.0	0.0	0.0	0.2	0.0	0.6	0.8
FISHING AND HUNTING	0.2	0.0	0.0	0.2	1.7	0.0	0.0	1.7
METAL MINING	0.1	0.0	0.0	0.1	0.3	0.0	0.1	0.4
PETROLEUM AND GAS WELLS	0.3	0.0	0.1	0.3	0.5	0.0	0.0	0.5
OTHER MINING	0.2	0.0	0.0	0.2	0.2	0.0	0.0	0.2
MEAT PRODUCTS	1.9	0.0	0.0	1.9	1.1	12.2	0.4	13.7
POULTRY PRODUCTS	10.8	9.3	0.0	20.1	6.7	0.0	0.6	7.2
FISH PRODUCTS	1.9	0.0	0.0	1.9	1.6	0.0	0.0	1.6
DAIRY PRODUCTS	7.9	19.3	0.0	27.3	4.0	40.8	0.2	44.9
FRUIT AND VEGETABLE PRODUCTS	9.5	0.0	0.0	9.5	8.1	0.0	0.6	8.7
GRAIN PRODUCTS	2.8	2.0	0.0	4.7	1.5	0.0	0.7	2.2
CONFECTIONARY PRODUCTS	4.9	0.0	0.0	4.9	6.5	3.9	0.1	10.5
MISCELLANEOUS FOOD	8.3	0.0	0.0	8.3	3.0	0.0	0.2	3.2
DISTILLERIES & BREWERIES	4.1	44.9	0.0	49.0	3.1	0.0	0.0	3.1
WINERIES	3.5	54.0	0.0	57.5	6.9	0.0	0.0	6.9
TOBACCO & TOBACCO PRODUCTS	16.5	0.0	0.0	16.5	20.7	0.0	0.0	20.7
RUBBER AND RUBBER PRODUCTS	9.4	0.0	0.0	9.4	4.5	0.0	0.1	4.6
LEATHER FOOTWEAR	20.7	0.0	0.0	20.7	7.9	0.0	0.0	7.9
LEATHER & OTHER LEATHER PRODUCTS	9.0	0.0	0.0	9.0	7.1	0.0	0.0	7.1
YARN & CLOTH	16.8	0.0	0.0	16.8	9.8	0.0	0.0	9.8
SYNTHETIC TEXTILES	12.0	0.0	0.0	12.0	5.8	0.0	0.0	5.8
OTHER TEXTILES	8.8	0.0	0.0	8.8	7.4	0.0	0.1	7.5
KNITTING MILLS	22.7	0.0	0.0	22.7	12.3	0.0	0.0	12.3
CLOTHING	19.7	0.0	0.0	19.7	10.9	0.0	0.0	10.9
SAWMILLS	1.3	0.0	0.0	1.3	0.2	0.0	0.0	0.2
VENEER,PLYWOOD,SASH & DOOR	4.4	0.0	0.0	4.4	2.2	0.0	0.0	2.2
OTHER WOOD PRODUCTS	3.6	0.0	0.0	3.6	2.4	0.0	0.0	2.4
FURNITURE	12.5	0.0	0.1	12.6	2.0	0.0	0.5	2.5
PULP & PAPER	1.7	0.0	0.0	1.7	0.4	0.0	0.2	0.6
OTHER PAPER PRODUCTS	8.7	0.0	0.0	8.7	3.1	0.0	0.1	3.3
PRINTING & PUBLISHING	2.5	0.0	0.0	2.5	0.6	0.0	0.0	0.6
ENGRAVING & STEREOTYPING	5.8	0.0	0.0	5.8	1.5	0.0	0.4	1.9
IRON & STEEL	6.7	0.0	0.0	6.7	3.4	0.0	0.0	3.4
STEEL PIPE & TUBE	7.6	0.0	0.0	7.6	4.1	0.0	0.0	4.1
SMELTING & REFINING	1.5	0.0	0.1	1.6	1.2	0.0	0.0	1.2
ALUMINUM ROLLING,CASTING & EXTRUDING	1.4	0.0	0.0	1.4	2.6	0.0	0.0	2.6
OTHER METAL ROLLING,CASTING & EXTRUDING	2.4	0.0	0.0	2.5	4.2	0.0	1.3	5.5

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TABLE C1 ....CONCLUDED
COMPARISON OF CANADIAN AND U.S TRADE BARRIERS (93 INDUSTRY CLASSIFICATION)

	CANADA				UNITED STATES			
	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (2)	FEDERAL PROCURE-MENT (3)	TOTAL	TARIFF RATE (1)	QUAN-TITATIVE RES-TRICTIONS (4)	FEDERAL PROCURE-MENT (5)	TOTAL
	(PER CENT)							
MOTOR VEHICLES	1.8	0.0	0.0	1.8	0.2	0.0	0.2	0.3
MOTOR VEHICLE PARTS	1.1	0.0	0.0	1.1	0.6	0.0	0.0	0.6
SHIPBUILDING	10.1	0.0	1.4	11.4	0.3	0.0	0.0	0.3
OTHER TRANSPORTATION EQUIPMENT	8.5	0.0	0.1	8.6	4.3	0.0	0.0	4.3
SMALL ELECTRIC APPLIANCES	7.7	0.0	0.2	7.8	3.7	0.0	0.1	3.7
MAJOR ELECTRIC APPLIANCES,RADIO & T.V.	8.7	0.0	0.1	8.7	3.7	0.0	0.1	3.8
COMMUNICATION EQUIPMENT	8.8	0.0	1.7	10.5	4.7	0.0	1.1	5.8
ELECTRICAL INDUSTRIAL EQUIPMENT	6.5	0.0	1.8	8.3	4.3	0.0	1.2	5.5
ELECTRIC WIRE & CABLE	8.5	0.0	0.0	8.5	4.6	0.0	0.1	4.7
OTHER ELECTRICAL PRODUCTS	5.9	0.0	0.1	5.9	3.5	0.0	0.1	3.6
CEMENT & LIME PRODUCTS	0.5	0.0	0.0	0.5	0.2	0.0	0.0	0.2
CONCRETE PRODUCTS	8.5	0.0	0.0	8.5	3.3	0.0	0.0	3.3
CLAY,STONE & REFRACTORY PRODUCTS	5.4	0.0	0.0	5.4	4.9	0.0	0.0	4.9
GLASS & GLASS PRODUCTS	8.4	0.0	0.0	8.4	1.7	0.0	0.0	1.7
OTHER NON-METAL MINERAL PRODUCTS	6.0	0.0	0.0	6.0	2.6	0.0	0.0	2.6
PETROLEUM REFINERIES	0.5	0.0	0.2	0.8	0.5	0.0	0.0	0.5
OTHER PETROLEUM & COAL PRODUCTS	0.8	0.0	0.0	0.8	0.8	0.0	0.0	0.8
MIXED FERTILIZERS	0.2	0.0	0.0	0.2	0.4	0.0	0.0	0.4
PLASTIC & SYNTHETIC RESINS	7.5	0.0	0.0	7.5	8.8	0.0	0.0	8.8
PHARMACEUTICAL	4.4	0.0	0.0	4.4	3.5	0.0	0.5	4.0
PAINTS & VARNISH	9.0	0.0	0.0	9.0	3.4	0.0	0.1	3.4
SOAPS & CLEANING COMPOUNDS	8.4	0.0	0.0	8.4	2.9	0.0	0.1	2.9
TOILET PREPARATIONS	10.1	0.0	0.0	10.1	5.0	0.0	0.1	5.0
INDUSTRIAL & OTHER CHEMICAL PRODUCTS	5.1	0.0	0.1	5.2	2.7	0.0	1.4	4.0
SCIENTIFIC & PROFESSIONAL EQUIPMENT	4.0	0.0	0.3	4.3	4.1	0.0	0.9	4.9
LINOLEUM & COAT FABRIC & MISC.	7.0	0.0	0.1	7.1	3.8	0.0	0.1	3.9
GOODS-PRODUCING	4.5	1.4	0.2	6.1	2.8	1.7	0.2	4.7

SEE TABLE 2 FOR FOOTNOTES

NOTE: THE ESTIMATES OF QUANTITATIVE RESTRICTIONS AND DISCRIMINATORY GOVERNMENT PROCUREMENT ARE EXPRESSED IN TARIFF EQUIVALENT FORM.

SOURCE: DEPARTMENT OF FINANCE AND THE INSTITUTE FOR RESEARCH ON PUBLIC POLICY

TABLE C2 ....CONCLUDED
COMPARISON OF CANADIAN AND U.S TRADE BARRIERS (70 INDUSTRY CLASSIFICATION)

	CANADA				UNITED STATES			
	TARIFF RATE (1)	QUANTITATIVE RESTRICTIONS (2)	FEDERAL PROCUREMENT (3)	TOTAL	TARIFF RATE (1)	QUANTITATIVE RESTRICTIONS (4)	FEDERAL PROCUREMENT (5)	TOTAL
	(PER CENT)							
BOILER & PLATE	7.4	0.0	0.7	8.1	4.3	0.0	0.1	4.4
FABRICATED STRUCTURAL STEEL	8.3	0.0	0.1	8.4	2.6	0.0	0.1	2.6
METAL STAMPING	7.2	0.0	0.5	7.8	0.5	0.0	0.0	0.5
WIRE & WIRE PRODUCTS	6.6	0.0	0.1	6.7	2.7	0.0	0.1	2.8
HARDWARE & CUTLERY	6.5	0.0	0.1	6.5	3.3	0.0	0.2	3.5
OTHER METAL FABRICATING	6.9	0.0	0.6	7.5	3.3	0.0	0.1	3.4
AGRICULTURAL MACHINERY & EQUIPMENT	0.5	0.0	0.0	0.5	0.9	0.0	0.0	0.9
INDUSTRIAL MACHINERY & EQUIPMENT	6.2	0.0	2.5	8.7	2.9	0.0	0.3	3.1
OFFICE MACHINERY & EQUIPMENT	4.2	0.0	2.2	6.4	3.5	0.0	1.1	4.6
AIRCRAFT & PARTS	0.5	0.0	0.2	0.6	0.9	0.0	0.8	1.7
MOTOR VEHICLES	1.8	0.0	0.0	1.8	0.2	0.0	0.2	0.3
MOTOR VEHICLE PARTS	1.1	0.0	0.0	1.1	0.6	0.0	0.0	0.6
SHIPBUILDING	10.1	0.0	1.4	11.4	0.3	0.0	0.0	0.3
OTHER TRANSPORTATION EQUIPMENT	8.5	0.0	0.1	8.6	4.3	0.0	0.0	4.3
SMALL ELECTRIC APPLIANCES	7.7	0.0	0.2	7.8	3.7	0.0	0.1	3.7
MAJOR ELECTRIC APPLIANCES, RADIO & T.V.	8.7	0.0	0.1	8.7	3.7	0.0	0.1	3.8
COMMUNICATION EQUIPMENT	8.8	0.0	1.7	10.5	4.7	0.0	1.1	5.8
ELECTRICAL INDUSTRIAL EQUIPMENT	6.5	0.0	1.8	8.3	4.3	0.0	1.2	5.5
OTHER ELECTRICAL PRODUCTS	7.1	0.0	0.0	7.1	3.9	0.0	0.1	4.0
CEMENT & CONCRETE PRODUCTS	5.9	0.0	0.0	5.9	2.5	0.0	0.0	2.5
GLASS & GLASS PRODUCTS	8.4	0.0	0.0	8.4	1.7	0.0	0.0	1.7
OTHER NON-METAL MINERAL PRODUCTS	5.8	0.0	0.0	5.8	3.3	0.0	0.0	3.4
PETROLEUM REFINERIES	0.5	0.0	0.2	0.8	0.5	0.0	0.0	0.5
OTHER PETROLEUM & COAL PRODUCTS	0.8	0.0	0.0	0.8	0.8	0.0	0.0	0.8
MIXED FERTILIZERS	0.2	0.0	0.0	0.2	0.4	0.0	0.0	0.4
PLASTIC & SYNTHETIC RESINS	7.5	0.0	0.0	7.5	8.8	0.0	0.0	8.8
PHARMACEUTICAL	4.4	0.0	0.0	4.4	3.5	0.0	0.5	4.0
HOUSEHOLD CHEMICALS	9.0	0.0	0.0	9.0	3.6	0.0	0.1	3.7
INDUSTRIAL & OTHER CHEMICAL PRODUCTS	5.1	0.0	0.1	5.2	2.7	0.0	1.4	4.0
SCIENTIFIC & PROFESSIONAL EQUIPMENT	4.0	0.0	0.3	4.3	4.1	0.0	0.9	4.9
MISCELLANEOUS MANUFACTURING	7.0	0.0	0.1	7.1	3.8	0.0	0.1	3.9
GOODS-PRODUCING	4.5	1.4	0.2	6.1	2.8	1.7	0.2	4.7

SEE TABLE 2 FOR FOOTNOTES

NOTE: THE ESTIMATES OF QUANTITATIVE RESTRICTIONS AND DISCRIMINATORY GOVERNMENT PROCUREMENT ARE EXPRESSED IN TARIFF EQUIVALENT FORM.

SOURCE: DEPARTMENT OF FINANCE AND THE INSTITUTE FOR RESEARCH ON PUBLIC POLICY

Annex D

Methodology Used to Estimate the Price Effects of Quantitative Restrictions and Government Procurement Policies

Quantitative Restrictions

The impact of quantitative restrictions (QRs) on domestic prices of Canadian agricultural products was calculated as the difference between the observed producer price in Canada and the comparable world price, after adjustment for tariffs and transportation charges. Because of data limitations, several proxies for the world price were used. These proxies are described in Table B1. The price comparisons were carried out for the 1980-85 period because of the variability of agricultural prices.

Although this approach has considerable intuitive appeal, price comparisons are difficult to make in practice. Data problems make price comparisons of even relatively standard items, such as agricultural products, quite difficult. Consequently the estimates presented in this study should be interpreted with considerable caution.

The price effects of U.S. QRs were obtained from Hufbauer, G.C. et al Trade Protection in the United States, Institute for International Economics, 1986. This study compared U.S. domestic prices to world prices to calculate the tariff equivalents of U.S. QRs.

Table D1
Data Series Used to Proxy World Prices in the Calculation of the Tariff Equivalent of Canadian Quantitative Restrictions

Restricted Product	World Price Proxy
Grain	Canadian export price for grain.
Eggs in tne Shell	Price of imports from the United States.
Unprocessed Milk	Average of the Canadian and Australian export prices.
Live Poultry	Estimated using the price of poultry products imported from the U.S. and the share of live poultry costs in the poultry products industry.
Flour	Average of the U.S. wholesale price and the increase in domestic flour prices caused by higher input costs due to quantitative restrictions on grain imports.
Feed	Estimated by the increase in domestic feed prices caused by higher input costs due to quantitative restrictions on grain imports.
Dairy Products	Average of the Canadian and Australian export prices.
Poultry Products	Price of imports from the United States.

Federal Procurement

The tariff equivalents (TE) of federal procurement policies were estimated using the elasticity approach. Under this approach, the import price elasticity of demand is used to estimate the tariff rate required to reduce total imports by the change in government imports attributable to preferential procurement practices. The change in government imports was estimated by assuming that the observed differences between federal government and private sector import propensities are caused entirely by discrimination between domestic and foreign suppliers. Using estimated values of import price elasticities, it is possible to calculate the implicit change in import prices and, hence, in domestic prices caused by preferential government procurement.

The import price elasticity of demand is defined as

$$NM = \frac{WM/M}{WP/P} \qquad (1)$$

where NM = import price elasticity of demand
M = total imports
P = import prices including tariffs

This formula can be rearranged to calculate the price increase, or the TE, required to reduce total imports by the change in government imports attributable to preferential government procurement practices. The resulting formula, which also excludes the effect of existing tariffs, is as follows:

$$TE = 100 * \frac{(MG_1 - MG_0)}{M_0} * \frac{(1 + t)}{NM} \qquad (2)$$

where MG_1 = government sector imports after discrimination
MG_0 = government sector imports before discrimination
M_0 = total imports before preferential procurement
t = tariff rate

However, government sector imports in the absence of preferential procurement are not observable. They were estimated as follows:

$$MG_0 = APMP * GP \qquad (3)$$

where APMP = private sector average propensity to import goods (private sector imports divided by private sector expenditures)

Total imports in the absence of discrimination can be represented by:

$$M_0 = APMP * (DD - GP) + APMP * GP$$

or $$M_0 = APMP * DD \qquad (4)$$

where GP = government procurement
DD = domestic demand.

Similarly MG_1 can be replaced with

$$MG_1 = APMG * GP \qquad (5)$$

where APMG = government sector average propensity to import goods (government imports divided by government procurement)

By substituting (3), (4) and (5) into (2) and rearranging terms, the TE of preferential government procurement becomes

$$TE = 100 * \frac{(APMP - APMG)}{APMP} * \frac{(1 + t)}{NM} * \frac{GP}{DD}$$

The percentage change in government imports due to discrimination relative to government imports in the absence of discrimination is represented in the formula by $\frac{APMP - APMG}{APMP}$.

The change in prices in the government market is calculated by multiplying the percentage change in government imports by $\frac{(1 + t)}{NM}$ and that price change is scaled by the government market share, $\frac{GP}{DD}$, to give the change in prices for the economy as a whole.

On an industry basis, the distribution of Canadian federal government procurement of goods was obtained from the 1981 input-output tables, the latest available. The share of imports by industry was calculated making use of information on the location of vendors in 1981 gathered by the Department of Supply and Services.[1] That is, government suppliers are identified as being based in Canada or elsewhere and foreign-based producers are assumed to use only foreign goods and services in supplying the government. Similarly, domestic suppliers are assumed to use only Canadian goods and services. Unfortunately, it is not possible to identify Canadian-based agents of foreign producers, so the federal import propensity is biased downwards. That import propensities of domestic suppliers are not taken into consideration also causes a downward bias while domestic sourcing by foreign suppliers has the opposite effect, although probably much smaller. The import

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1. Import propensities calculated in this way do not vary significantly in 1978, 1981 and 1984.

elasticities used in the calculation were obtained from econometric work undertaken in the Economic Studies and Policy Analysis Division.

Information on U.S. federal purchases[1] is available from the Federal Procurement Data Center (FPDC). As in Canada, suppliers are identified by location. Government purchases cannot be directly allocated to industries using the FPDC data, although the appropriate concordances do exist. The import price elasticities used in the U.S. calculations were obtained from the Inforum model of the United States.

The methodology used to estimate the price effects of preferential federal procurement policies is relatively simple; but it does permit quantification of the effects on a large number of industries. However, when assessing the estimates presented in this study the following should be borne in mind:

- attributing all of the difference between government and private sector import propensities to discrimination is an oversimplification. Other factors, such as the degree of intra-corporate trade between Canadian subsidiaries and their U.S. parent, may account for some of the observed differences;

- the federal import propensity for goods is likely underestimated so the price effects are overestimated, assuming private sector import propensities are reliable benchmarks; and

- the assumption that services are non-traded causes the estimates to be biased downwards.

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1. U.S. federal procurement estimates exclude the effects of the Surface Transportation Assistance Act which, while a federal law, affects state purchases not federal.

A more general comment is that the net impact of preferential procurement policy on an industry may be even smaller than suggested by the estimates of price protection shown in this study. For example, increased government procurement may simply "crowd out" private sector buyers. This could occur if increased government purchases causes overall industry selling prices to rise, which would encourage private sector purchasers to switch to imports. On the other hand, if the supplying industries can expand output at constant or decreasing costs then preferential procurement policies would have a favourable impact on industry production levels. However, in the latter case the estimates of price protection presented in this study would not be strictly relevant.

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